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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte JAMES KLENISTEIBER, RICHARD L. HAMMONS,
DILIP GUNAWARDENA, HUNG NGUYEN,
SHANKAR BALASUBRAMANIAN, and
VIDYA RENGANARARAYANAN

Appeal 2009-006639
Application 10/062,125
Technology Center 2400

Before JOSEPH L. DIXON, LANCE LEONARD BARRY, and
STEPHEN C. SIU, *Administrative Patent Judges*.

SIU, *Administrative Patent Judge*.

DECISION ON APPEAL

This is an appeal under 35 U.S.C. § 134(a) from the Examiner's final rejection of claims 1-61 and 72-87. Claims 62-71, 88, and 89 are canceled. We have jurisdiction under 35 U.S.C. § 6(b).

We affirm.

STATEMENT OF THE CASE

The invention relates to security in switching and routing environments (Spec. 1, ¶ [0001]).

Independent claim 1 is illustrative:

1. A method of operating a secure network having plurality of network nodes, each node comprising one or more ports, the method comprising the steps of:
locating one or more nodes in a secure location;
locating one or more nodes in a less secure location;
communicating selected management information from a primary configuration node to all other nodes in the secure network, said communicating having the sub-steps of,
 - a first port on a first node sending said management information to a second port on a second node via a communication media exclusively shared by said first port and said second port;
 - allowing no management access to said secure network from nodes located in said less secure locations;
 - determining a first list of nodes that may send or receive substantive communication in the secure network; and
 - prior to substantive communication between any two directly-connected ports, authenticating a link between said directly connected ports.

(App Br. 30, Claims Appendix).

The Examiner relies on the following references as evidence in support of the rejection:

| | | |
|---------|--------------|--------------|
| Fischer | US 5,422,953 | Jun. 6, 1995 |
| Sudama | US 5,619,657 | Apr. 8, 1997 |

Thapar

US 5,694,615

Dec. 2, 1997

FIPS PUB 196, *Entity Authentication Using Public Key Cryptography*, National Institute of Standards and Technology, pp. 1-50, Feb. 18, 1997 (“FIPS”).

Applicant admitted prior art, Spec. 2 ¶ [0005] (“AAPA”).

The Examiner rejected the claims as follows:

1. Claims 1-61, 72, and 76-78 are under 35 U.S.C. § 112 second paragraph as being indefinite.
2. Claims 1-13, 17-19, 35-47, 51-53, and 73 under 35 U.S.C. § 102(b) as being anticipated by Sudama.
3. Claims 14-16, 20, 21, 48-50, 54, and 55 under 35 U.S.C. § 103(a) as being unpatentable over Sudama.
4. Claims 22-31, 33, 34, 56-61, and 76-87 under 35 U.S.C. § 103(a) as being unpatentable over Sudama and FIPS.
5. Claim 32 under 35 U.S.C. § 103(a) as being unpatentable over Sudama, FIPS, and Fischer.
6. Claims 72 and 74 under 35 U.S.C. § 103(a) as being unpatentable over Sudama and Thapar.
7. Claim 75 under 35 U.S.C. § 103(a) as being unpatentable over Sudama and AAPA.

ISSUES

Based on Appellants’ arguments and the Examiner’s findings, we identify the following issues:

1. Did the Examiner err in concluding that claims 1-61, 72, and 76-78 are indefinite?

2. Did the Examiner err in finding that Sudama discloses limitations recited in claims 1-13, 17-19, 35-47, 51-53, and 73?

3. Did the Examiner err in finding that Sudama and one of FIPS, Fischer, Thapar, or APA discloses or suggests claims 14-16, 20-31, 33, 34, 48-50, 54-61, 72, and 74-87?

FINDINGS OF FACT

The following Findings of Fact (FF) are shown by a preponderance of the evidence.

1. Sudama discloses that a “global database maintains and provides a list of hosts for performing specified functions, the hosts’ designated management servers and trusted routing paths between the management servers” (col. 5, ll. 21-24). “A transmission between two management servers in a network will not occur unless the sender and receiver of the request are determined by each other to be valid parties for executing the transmission of the request” (col. 5, ll. 37-40). The database also “provides a namespace which stores host names associated with specified management services as well as designated management servers for the specified hosts” (col. 8, ll. 38-41).
2. Sudama discloses a hierarchy illustrating a “network configuration of four (4) networked systems, S1-S4 Each system S contains a single management server M and one or more hosts C” (col. 8, ll. 46-49; fig. 2). “Management operations can follow a trusted path downstream from M1 to M4, however, no trusted path exists for routing management operations upstream” (col. 8, ll. 52-55).

PRINCIPLES OF LAW

The test for definiteness under 35 U.S.C. § 112, second paragraph is whether “those skilled in the art would understand what is claimed when the claim is read in light of the specification.” *Orthokinetics, Inc. v. Safety Travel Chairs, Inc.*, 806 F.2d 1565, 1576 (Fed. Cir. 1986) (citations omitted).

ANALYSIS

(1) Indefiniteness rejection

The Examiner finds that the terms “secure location,” “less secure location,” and “substantive,” as recited in claim 1 are indefinite because the terms are “not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention” (Ans. 3-4).

However, the fact that claim language, including terms of degree, may not be precise, does not automatically render the claim indefinite under 35 U.S.C. § 112, second paragraph. *Seattle Box Co. v. Industrial Crating & Packing, Inc.*, 731 F.2d 818 (Fed. Cir. 1984). Rather, whether claim terms are indefinite depends on whether one of ordinary skill in the art would understand what is claimed, in light of the Specification. In this case, we do not agree with the Examiner that one of ordinary skill in the art would not understand the meaning of the terms “secure” or “less secure” given the general level of knowledge in the art in light of the Specification. For example, the Specification discloses general techniques for securing a

network (see e.g., ¶¶ [0061] – [0074]). In addition, given the status of the art being well developed, we disagree with the Examiner that one of ordinary skill in the art would not have been reasonably apprised of the scope of the invention and the meaning of the term “secure,” particularly given that the prior art (e.g., the Sudama reference) demonstrates that one of skill in the art would have understood the meaning of “secure” or “security” in the context of network security by also disclosing network security.

For similar reasons, we also do not agree with the Examiner that one of ordinary skill in the art would not have understood the term “substantive.” The term, “substantive,” while a broad term, would have been understood by one of ordinary skill in the art given the general meaning of the term to include, for example, anything of importance or relevance. See, e.g., *Andrew Corp. v. Gabriel Electronics, Inc.*, 847 F.2d 819 (Fed Cir. 1988). Breadth of a claim is not to be equated with indefiniteness. *In re Miller*, 441 F.2d 689 (CCPA 1971).

We therefore conclude that the Examiner erred in rejecting claims 1-61 and 72-87 as being indefinite.

(2) Claim 1 – prior art rejections

Appellants argue that Sudama fails to disclose a secure (or less secure) location as claimed because “physicality is inherent” (Reply Br. 4). However, as the Specification discloses, a “secure location” may include, for example, “logical security” or “physical security” (¶ [0015]). Since the security at a location need not necessarily be “physical security” (i.e., may instead be “logical security”), we disagree with Appellants’ argument that the claimed secure (or less secure) location is inherently a physical location.

Appellants also argue that “Sudama also fails to teach . . . ‘determining a first list of nodes that may send or receive substantive communication in the secure network’” (App. Br. 18) because:

- 1) “[t]rusted routing paths have nothing to do with a list of all devices allowed to send or receive substantive communication in a secure network” (App. Br. 18),
- 2) “Sudama’s list does not foreclose the possibility of other hosts engaging in substantive communication on the network” (App. Br. 18),
- 3) “one of ordinary skill in the art would understand ‘substantive communication’ to be distinct from system overhead” (Reply Br. 5), and
- 4) Sudama fails to disclose “[any type of] substantive communication” (Reply Br. 5).

However, Sudama discloses a “list of hosts for performing specified functions . . . [including] trusted routing paths between the management servers” (col. 5, ll. 21-24) and that if a trusted path exists between two devices, “the originating management server transfers the management operation to the designated management server . . . specified by the database” (col. 5, ll. 25-28). Since Sudama’s “trusted routing path” indicates whether a device is allowed to send or receive a communication and indicates the transmission path over which the communication is transmitted, we are not persuaded by Appellants’ argument that Sudama supposedly fails to disclose this feature. Also, we find Appellants’ argument unavailing that the list in Sudama “does not foreclose the possibility of other hosts” since even if Appellants’ statement is true, Sudama, as described above, nevertheless discloses a list of trusted routing paths (over which “substantive communication” may be transmitted) between specific devices.

While Appellants argue that “one of ordinary skill in the art would understand ‘substantive communication’ to be distinct from system overhead” (Reply Br. 5), Appellants do not provide a specific or specialized definition of the term “substantive communication” or adequate reasons as to why a “substantive communication” would not be understood by one of ordinary skill in the art to include “system overhead.” In addition, claim 1 does not recite “system overhead.” Similarly, Appellants argue that Sudama fails to disclose “any type of substantive communication” (Reply Br. 5) but claim 1 does not recite “any type of substantive communication.”

We therefore conclude that the Examiner did not err in finding that Sudama discloses the disputed limitation recited in claim 1, and claims 2-34, which depend therefrom, with respect to this issue.

(3) Claim 35

Appellants argue that Sudama fails to disclose “a primary configuration node [that] exclusively controls a defined set of management functions throughout the network” (App. Br. 19). However, we agree with the Examiner that Sudama discloses this feature for reasons set forth by the Examiner (Ans. 22).

Appellants also argue that Sudama fails to disclose “specifying [all] nodes or ports that may send or receive [any] substantive communication” (Reply Br. 5) and that one of skill in the art would interpret claim 35 to include the additional terms because “any other interpretation would render the memory unsuitable for its use in controlling access to the secure network” (Reply Br. 6). However, Appellants do not provide sufficient reasons as to why specifying nodes that may send or receive substantive

communications would render the node unsuitable for use while specifying all nodes that may send or receive any substantive communication would not. In fact, Appellants do not identify any substantive reasons why either interpretation would render the claimed device unsuitable. Further, Appellants argue additional terminology that is not recited in the claim.

Thus, we find the Examiner did not err in rejecting claim 35, and claims 36-61, which depend therefrom.

(4) Claim 73

Appellants argue that “Sudama contains no teaching or suggestion of maintaining a list of all devices allowed on the network” (App. Br. 21). Claim 73 recites one or more pre-designated devices for facilitating management-level control and all of said devices carrying a listing of all devices allowed on the network.

As described above, Sudama discloses management servers that facilitate management-level control of the network and that each of the servers has a database (Fig. 1) that contains “lists of trusted relations between the management servers” (col. 8, ll. 8-9). Since the management servers of Sudama facilitate management-level control of the network, we agree with the Examiner that the management servers of Sudama constitute “pre-designated devices” that, as recited in claim 73, also facilitate management-level control of the network. Also, all of the pre-designated devices of Sudama (i.e., management servers) have a database that contains a list of devices (i.e., management servers and associated host devices – see Fig. 2) allowed on the network (i.e., trusted relations over which communication between devices may occur). We cannot agree with

Appellants' argument because Appellant does not demonstrate a difference between the management servers of Sudama and the claimed "pre-designated devices".

Thus, the Examiner did not err in rejecting claim 73, and claims 74 and 75, which depend therefrom.

(5) Claims 2-6, 10-12, 36-40, and 44-46

Appellants argue that Sudama fails to disclose "succession of the management entity" (App. Br. 22). Claims 2-6, 10-12, 36-40, and 44-46 recite "succession of primary configuration node" (Claims App'x 30-39). The Examiner finds that Sudama discloses a succession of networked systems (i.e., S1-S4) "in a downstream manner" (Ans. 25) and, hence, discloses succession of a primary configuration node. We agree with the Examiner.

As described above, Sudama discloses management servers with databases that store lists of trusted relations over which devices communicate data. Also, management servers are configured in series (i.e., in succession) such that data flows downstream but not upstream (e.g., col. 8, ll. 46-55). Since the databases in each of the management servers contain information pertaining to the relations over which data is transmitted between devices and the devices are configured in succession with data flowing to successive devices, the lists in the management servers contain information corresponding to succession of a node in the system (i.e., the position in succession of the node in the system).

Appellants argue that "if management server M1 [of Sudama] failed, management server M2 . . . would not be able to succeed M1 . . . because

there is no path for management operations to flow upstream” (Reply Br. 6). However, management server M2 would still “succeed” M1 in Sudama since M2 is configured to follow (i.e., “succeed”) M1 in the network configuration. In addition, if server M1 in Sudama failed as Appellants suggest, M2 would then be the highest located operational server in the hierarchical topology and no data would flow upstream since there would be no device to receive such data.

Thus, the Examiner did not err in rejecting claims 2-6, 10-12, 36-40, and 44-46.

(6) Claims 13 and 47

Appellant argues that Sudama fails to disclose “that management access be allowed only from designated nodes” (App. Br. 23). Claim 13 recites “allowing no management access to secure network from nodes located in said less secure locations” (Claims App’x 33). The Examiner finds that Sudama discloses a network in which nodes in a network “cannot send management operations upstream” (Ans. 25) and hence, are not allowed management access to the designated (upstream) nodes. Appellants do not respond to this finding. We agree with the Examiner for reasons set forth by the Examiner.

In addition, we note that claim 47 does not recite “management access be allowed only from designated nodes” (App. Br. 23) as Appellants assert.

Thus, the Examiner did not err in rejecting claims 13 and 47, and claim 14-17 and 48-51, which depend therefrom.

(7) Claims 18, 19, 52, and 53

Appellants argue that Sudama fails to disclose a list “distributed to every node in the secure network” (App. Br. 23). The Examiner finds that Sudama discloses “lists are stored locally at every ‘node’ S1-S4 [containing] one of the management servers M1-M4” (Ans. 26).

Appellants argue that “the meaning of the term ‘nodes’ . . . is . . . inconsistent with” the devices in S1-S4 of Sudama (Reply Br. 7) but Appellants do not provide a specific definition of the term “node” or indicate an explicit definition of the term “node” in the Specification that is different from the devices of Sudama. Since network “nodes” construed broadly but reasonably may include, for example, any devices that manage or transmit data in the network and since the devices in each of S1-S4 of Sudama manages or transmits data, Appellant does not demonstrate a difference between the devices in S1-S4 of Sudama and the claimed “nodes.” Nor have Appellants indicated any substantial differences.

Thus, the Examiner did not err in rejecting claims 18, 19, 52, and 53, and claim 20, 21, 54, and 55, which depend therefrom.

(8) Claims 76-78

Appellants argue that Sudama fails to disclose or suggest “a channel that can be disabled” (Reply Br. 7) but discloses, instead, “a channel that does not exist” (App. Br. 25) while the Examiner finds that Sudama discloses or suggests upstream logical paths that “exist . . . but the lists

‘disable’ these paths” (Ans. 27). Claim 76 recites a “logical management access channel that may be disabled” (Claims App’x 42).

We disagree with Appellants’ contention that Sudama fails to disclose or suggest a channel that is disabled. Rather, Sudama discloses a path that exists (as illustrated in Fig. 2) but that “no *trusted* path exists for routing management operations upstream” (col. 8, ll. 54-55) (emphasis added). As Sudama discloses, when a trusted path does not exist, then devices “cannot transmit a management operation” (col. 8, l. 56) over the path (because the path is not a trusted path). Given the fact that the existing (not trusted) path is not operational, we agree with the Examiner that it would at least have been obvious to one of ordinary skill in the art to utilize a non-operational path as a “disabled” path since one of ordinary skill in the art would have understood that both a non-operational path and a “disabled” path are non-functional in terms of transmission of data.

For at least the above reasons, we find no error with respect to this issue with the Examiner’s 35 U.S.C. § 103(a) rejection of claims 76-78.

(9) Claims 79-87

Appellants argue that Sudama fails to disclose a list indicating devices that may operate as a network configuration entity and a list that indicates each device allowed to participate in a secure network (App. Br. 26) while the Examiner finds that Sudama discloses both a list that specifies “the only device which can perform management operations” (Ans. 27) (i.e., the claimed NCE list that indicates devices that may operate as a network configuration entity) and a list that indicates devices where “[t]he simple presence of the device being on [the list] . . . is an indication that it is

allowed to participate in the secure network” (Ans. 28) (i.e., the claimed SCC list that indicates devices that are allowed to participate in a network). We agree with the Examiner for reasons set forth by the Examiner. Appellant does not sufficiently refute the Examiner’s findings with regard to this issue.

For at least the above reasons, we find no error with respect to this issue with the Examiner’s 35 U.S.C. § 103(a) rejection of claims 79-87.

CONCLUSIONS OF LAW

Based on the findings of facts and analysis above, we find no error in the Examiner’s rejection of claims 1-13, 17-19, 35-47, 51-53, and 73 as being anticipated by Sudama or claims 14-16, 20-34, 48-50, 54-61, 72-87 as being unpatentable over Sudama and any one of FIPS, Fischer, Thapar, or APA. However, we find the Examiner erred in rejecting claims 1-61 and 72-87 as being indefinite.

DECISION

We affirm the Examiner’s decisions rejecting claims 1-13, 17-19, 35-47, 51-53, and 73 under 35 U.S.C. § 102(b), and claims 14-16, 20-34, 48-50, 54-61, 72, 74-87 under 35 U.S.C. § 103(a). We reverse the Examiner’s rejection of claims 1-61 and 72-87 under 35 U.S.C. § 112 second paragraph.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED